



**STAN-EVAL NOTES**  
**CIVIL AIR PATROL VIRGINIA WING**  
**UNITED STATES AIR FORCE AUXILIARY**  
7401 Airfield Drive  
Richmond, Virginia 23237-2250  
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**New NOTAM for JYO Maneuvering Area (LMA):** The beloved FDC NOTAM 0/4965 has been replaced by FDC 1/ 5334 on November 30, 2011 due to a change in flight plan requirements. A SFRA Flight plan is no longer required for egress and ingress procedures in the LMA ONLY when squawking the appropriate code. SFRA flight plans are still required for all other operations including pattern work.

**A. Egress procedures for Leesburg maneuvering area.**

- 1) Aircraft must squawk transponder code 1226
- 2) Pilots departing JYO must announce the aircraft call sign, aircraft type and intended departure runway on the published CTAF prior to departure.
- 3) Pilots must exit the LEESBURG MANEUVERING AREA via the most direct lateral route while avoiding the SFRA.
- 4) Pilots need not communicate with Potomac TRACON (PCT) unless otherwise directed.

**B. Ingress procedures for Leesburg maneuvering area.**

- 1) Aircraft must squawk transponder code 1227 prior to entering the Leesburg maneuvering area to indicate the pilot's intent to land at JYO.
- 2) Before entering the Leesburg maneuvering area, pilots must announce the aircraft call sign, aircraft type and runway of intended landing on the published CTAF.
- 3) Pilots must enter the Leesburg maneuvering area via the most direct route.
- 4) Pilots need not communicate with Potomac TRACON (PCT) unless otherwise directed.

**Back to Normal Operations, almost (G. Jackson):** After suspending most flight operations, all flight operations except A-3 are back to normal operations according to NHQ. We have been instructed to be frugal and responsible with the dollars we receive. Ferry times for O rides are an example. Make sure you are giving maximum numbers of O rides with minimal ferry flight times. O rides can be successfully done at 0.8 hrs so no stretching them to 1.2 just to add hours on the planes or pad your logbooks. A-9's that can be done with ground relo of crews are another example of cost savings.

All WMIRS entries, including uploading of receipts, must be completed within 72 hrs. If you fly A type flight codes, e104's are to be complete and you are encouraged to scan/upload your Tactical Risk Management Form (TRM) and W&B as well. Just consider this what you do in return for funded flying. This was something we did well on the recent SAV and for our CD/HLS missions. Let's extend it out to all A flight codes. Do your paperwork in a timely fashion. If you fail to do so you can expect a nasty gram or worse, a bill for the gas if NHQ denies accepting the receipt because it was late. There won't be much forgiveness in the system when money is tight.

NHQ wants everybody to be onboard with flying in a very cost conscious fashion and we want to support them. VAWG will be on board with this concept.

**GFC700 is not a Wing Leveler:** The GFC700 that is part of the G1000 suite is a wonderful autopilot. Properly used, it can be a great asset and makes flying IFR much easier. However, there are some misconceptions by pilots on exactly what it does when it comes to using it as a wing leveler. If you engage the autopilot (and don't have HDG or other mode active), the GFC700 will not roll the aircraft to a wings level and pitch neutral attitude

as some seem to expect. Instead, the GFC700 when activated captures whatever attitude (roll and pitch) the aircraft is in. So if you are banked to the left and descending, activating the GFC700 will capture that and continue your bank and descent (right into the ground if you don't watch out!). So if you are in the soup don't think you can simply hit the auto pilot button and everything will go straight and level. In order for the GFC to level the wings, you need to activate HDG mode (or NAV) which will level the wings once it turns to the proper heading. Likewise, in order to achieve a nose level attitude, you need to activate the ALT mode to capture whatever altitude you are at. Of course, if you are in an unusual attitude, activating the GFC700 may not help at all as there are certain limits that if exceeded will prevent the auto pilot from even engaging. The best way to figure all this out is to go out in good VFR conditions at a safe altitude and engage the autopilot in various attitudes. Then see what you have to do to get roll and pitch to a straight and level attitude.

**Changes to Part 61 (M. Schwartz, Aviation Adventures):** Part 61 and airman training just had some changes sort take effect and they will affect how many of us proceed with our flight training. I just wanted to point out a couple of the most significant ones to make you aware that they are in the books now.

First is the definition of a complex airplane was changed to read as follows: Complex airplane means an airplane that has a retractable landing gear, flaps, and a controllable pitch propeller, including airplanes equipped with an engine control system consisting of a digital computer and associated accessories for controlling the engine and propeller, such as a full authority digital engine control; or, in the case of a seaplane, flaps and a controllable pitch propeller, including seaplanes equipped with an engine control system consisting of a digital computer and associated accessories for controlling the engine and propeller, such as a full authority digital engine control.

What this means is you can now use a DA-42 Diamond Twinstar or any other FADEC equipped aircraft to meet the requirements of a complex airplane for the commercial rating.

For you instrument rated folks or students out there staying current or practicing with a safety pilot while you shoot approaches etc, you must now record the name of the safety pilot in your log book. I know many of you do this already, but for those that don't, its now regulatory that you do. For the safety pilots, its suggested that you record the name of the pilot that you were flying as a safety pilot for in your logbook to avoid any confusion later should something happen. Oh, and §61.109 discusses the requirements for flying with a safety pilot. That section didn't change.

**Grass Strips:** Some CAP pilots are surprised to learn that landing on a grass strip is not prohibited by CAPR 60-1. If the airport is listed in the AFD and has a grass strip, you may operate from that grass strip. Several airports in Virginia have grass strips and are in the AFD. However, for most CAP operations and pilots, using grass strips should be avoided. It may only be necessary for Mission Pilots in support of a specific mission. If you have no experience with grass strip operations, you would be foolish to operate on turf without taking along an IP who understands the challenges of such operations. Many good pilots have damaged perfectly good airplanes on grass strips through either carelessness or ignorance of operating on grass. Here are just a few of the bad things that can happen when operating from a grass strip:

- Grass strips can be rough and bumpy causing propeller strikes or tail strikes (tail draggers are best when landing or taking off on turf)
- Landing on a wet grass strip can make brakes totally ineffective causing overruns
- Rocks or holes in a grass strip can bend landing gears or cause aircraft to ground loop
- Long grass can make takeoffs difficult or even impossible
- Grass strips are never level or smooth and require finesse to execute a good landing or takeoff
- Grass strips are usually home to all sorts of wildlife making wildlife strikes more frequent
- Grass strips are rarely lighted at night and even so, the hazard of landing is greatly increased at night

When God created grass strips he made sure that none were perfectly straight and level. All grass strips have their particular character and can be complex beasts. Even for experienced turf pilots, landing at an unfamiliar

grass strip is usually not a great idea. You have to know the surface and its complexities. The grass strip will usually have multiple slopes, may not be exactly straight, and have one or two spots you don't want to land on. There is often a "sweet spot" you want to land on and landing anywhere else is not a good experience. Some grass strips may be "one way" only. E.g. you should only land and take off in one direction either because of obstacles or some feature of the strip itself. Grass strips can also change character due to rain, frost, grass length, wildlife activity (like ground hogs digging holes right at the touchdown point), and other factors. So don't think that the grass strip you landed on in June will be the same in September.

However, operating off grass strips is done all the time and can be a very rewarding experience if you are properly prepared. It may be a necessity for certain missions. There are advantages grass strips have over hard surfaces:

- Grass can soften landings making softer touchdowns possible
- Grass is forgiving with cross winds as sideward motion of the gear on grass is a bit more forgiving than concrete
- If the strip is really a field, operations can be aligned directly into the wind eliminating cross winds
- Operating on grass will improve your technique in general as it forces you to react quickly to every quirk on the turf
- It's the only way to go if you own a farm and want to fly your aircraft in and out of your property. Many fly in communities are turf based.
- It's fun

Before you operate from grass make sure you have been trained by an IP who understands grass runways and be sure you only operate on strips you know well.

**Load Limits for the C182 and GA8:** We are all familiar with the load limits of our CAP aircraft. For normal category aircraft such as our C182 and GA8 aircraft it's a positive 3.8 Gs and a negative 1.5 Gs. But many pilots are surprised during a Form 5 or Form 91 oral review when the Check Pilot asks them what the limits are with flaps down. If you read the POH carefully for the C182 and GA8 (as well as many other aircraft), the G limits are much less with flaps extended. For both the C182 and GA8 the positive load limit is reduced to 2.0 G's. This is due in part to how the wing is constructed. The flaps add strength to the wing when in the retracted position and help carry the load. When they are extended, the wing loses some of its strength and the allowable G load is reduced. 2.0 G's is not a lot. That's how many G's you pull in a 60 degree bank. A bank of 60 degrees with one notch of flaps is right at the load limit. Any unexpected gust could cause the load to go over the limit and risk structural damage to the aircraft.

This is an important point for mountain mission pilots who often fly in turbulence. We teach mission pilots to fly visual sorties at reduced airspeeds with a notch of flaps for safety. In smooth air, that's a good idea. But in moderate turbulence where you might exceed 2.0 G's that's a really bad idea. Better to keep the flaps retracted and add a few knots for safety.

Likewise, if you are landing or taking off in moderate turbulence, you might think twice about using flaps. Flaps are a wonderful thing, but be sure you can live with a 2.0 G limit.

To complicate matters even more, the G loads we are discussing assume that there are no other loads on the wing. Any sideways motion (as you get in turbulence) causes additional stress on the airframe. These twisting loads are not accounted for in the load limit calculations. Aerobatic pilots reduce the practical load limits when performing because the published load limits do not take into account twisting loads.

**Flying efficiently:** Many of us fly CAP aircraft without thinking too much about how efficiently we fly, but maybe we should. With the recent emphasis on keeping costs down, efficiency is becoming more important. Certainly other professional pilots consider efficiency and we should too. We may not get paid by CAP but

that's no excuse for not being professionals. There are several considerations to routinely consider for CAP operations.

- **Winds aloft:** Having a tail wind makes a flight a lot more efficient. Or if faced with a headwind, we can at least try and minimize the effects. So choosing the appropriate altitude to optimize the wind is an important step in flying efficiently. Since winds are a function of time, it may make sense to delay a flight to wait for better winds. Even if you are IFR, ATC will work with you to get an efficient altitude. Just be sure you consider any minimum altitude considerations.
- **Routing:** Direct is always best subject to terrain and weather considerations. Although flying under ATC control is usually preferable, especially from a safety point of view, it may make sense to cancel IFR and go VFR when you get circuitous routing (VFR only, please!!!). Or see if you can't ask ATC for a shortcut. Remember, you are paying their salary, not the other way around.
- **Weight:** For most operations, keeping the weight of the aircraft down makes for a more efficient flight. Make sure you are not carrying weight you don't need. But don't forget you need to have at least an hour of fuel on landing per CAPR 60-1.
- **Balance:** Flying nose heavy is an inefficient way to fly but it's often the case with two people in the front seat of a C182 with nothing in the back. Recall that as we fly, the horizontal stabilizer is keeping a downward force on the tail of the airplane. The more nose heavy we are, the more downward force is required. The downward force generated by the horizontal stabilizer is just more weight that the wings have to carry. So you are now flying a heavier airplane. If possible, load the aircraft so the center of gravity is more rearward (stay within W&B limits, please!!!). This is especially important on our GA8 aircraft when flown near gross weight. The GA8 climb performance at gross weight in a nose heavy condition is anemic.
- **Trim:** Watching someone fly with the ball not centered is a painful exercise. Keep the ball centered at all times (except during cross wind landings or Form 5 rides when the check pilot wants to see a slip!). Not only does it demonstrate good airmanship, it is efficient. If the ball is not centered you are in a slip and generating excess drag. Glass pilots especially can get lazy on the rudder (what? The GFC700 doesn't fly the rudder?) when flying using the autopilot.
- **Propeller settings:** A constant speed prop provides significant efficiencies over a fixed pitch prop if managed properly. Reduced RPM (coarse pitch) in cruise and descent can be very efficient. Choose the lowest allowable RPM for a given MP as specified by the POH to be the most efficient. But be sure to operate in accordance with the POH. Low RPM and high power settings will damage the engine.
- **Cowl flaps:** Cowl flaps cause extra drag when open resulting in 2 or 3 knots of lost airspeed. Keep them closed when temperatures allow it.
- **Leaning:** Running too rich at cruise is not only burns excess fuel but can cause engine problems by fouling plugs. Make sure your cruise checklist includes proper leaning. The G1000 has a lean assist function which you should be familiar with. Mixture (leaning) is a function of altitude so you must adjust the mixture anytime you change altitude. Some instructors teach full rich below some altitude but that is a poor technique. You should lean at any altitude as long as you are below 75% power. You should also lean for ground operations.

**FAA Creates New Laser Webpage (courtesy of the FAA):** In a continuing effort to combat the growing problem of lasers directed at aircraft, the FAA has created a new website to make it easier for pilots and the

public to report laser incidents and obtain information on the subject. The website, which can be found at [www.faa.gov/go/laserinfo](http://www.faa.gov/go/laserinfo), collects a wide array of laser information into one location. It includes links for reporting laser incidents, laser statistics, FAA press releases, and FAA research on the dangers lasers can pose to pilots, as well as downloadable videos. Laser event reports have increased steadily since the FAA created a formal reporting system in 2005 to collect information from pilots. Reports rose from nearly 300 in 2005 to 1,527 in 2009 and 2,836 in 2010.

**Venturing Further Afield (courtesy of the FAA):** Airports come in all shapes and sizes. Some are small and sleepy, while others are abuzz with more activity than a hornet's nest. Despite the differences, airports can offer opportunities for education and enjoyment at all levels. In her article, "Venturing Further Afield," author and FAA Safety Briefing editor Susan Parson (editor's note: that's VAWG's Susan Parson!) explores the many benefits of going "off the chart" when it comes to finding new places to park your airplane, not the least of which involves supporting our country's vital network of general aviation airports. Parson also touts the popularity of state-sponsored airport visitation programs as incentives for both students and "post-graduate" flyers looking to gain proficiency and/or earn higher certificates or ratings. To view the article, see page 8 of the new November/December 2011 FAA Safety Briefing. ([Click here](#)).

**Articles for the VAWG Stan Eval Newsletter:** We are always looking for brief articles of interest to VAWG pilots to include in this newsletter. CAP has many very experienced pilots and aircrew who have useful techniques, experiences, and tips to share. Please send your contribution to [steve.hertz@ngc.com](mailto:steve.hertz@ngc.com). If your article is accepted, you will get a pro rata share of the VAWG Stan Eval Newsletter subscription fees.